

REMARKS

Claims 23-25, 27, 29-33, 35-37, 39-43, and 45-50 are currently pending based on the amendment herein. Claims 26, 28, 34, 38, and 44 have been cancelled. Claims 23, 27, 33, 35, 37, 39-43, and 45 have been amended. Claims 46-50 are new

The Examiner objected to the drawings as allegedly “failing to comply with 37 CAR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 22 (page 19, line 19 first mentioned). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.” In response, Applicants amended FIG. 6 to show reference numeral 22.

Applicants have amended the specification for clarification purposes such that there is no new matter added.

The Examiner rejected claims 33, 41, 42, and 45 under 35 U.S.C. §112, second paragraph, as allegedly “being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.” In response, Applicants have amended claims 33, 41, 42, and 45 to clarify the invention.

The Examiner rejected claims 23, 25, 26, 28, 29, 32, 34-36, and 40-45 under 35 U.S.C. §102(b) as being anticipated by Johnson (U.S. Patent 4,747,897).

The Examiner further rejected claims 23, 25, 26, 28, 29, 32, 34-37, 40, and 43-45 under 35 U.S.C. §102(b) as being anticipated by Uno *et al.* (U.S. Patent 4,765,860).

The Examiner rejected claims 24, 33 and 38 under 35 U.S.C. §103(a) as being

unpatentable over Johnson as applied above in paragraph 10, and further in view of the admitted prior art (Specification pages 1-3).

The Examiner rejected claims 27 and 30 under 35 U.S.C. §103(a) as being unpatentable over Johnson as applied above in paragraph 10, and further in view of Hanson (U.S. Patent 4,670,089).

The Examiner rejected claim 37 under 35 U.S.C. §103(a) as being unpatentable over Johnson as applied above in paragraph 10, and further in view of Uno *et al.* and Susano *et al.* (U.S. Patent 5,425,832).

The Examiner rejected claims 31 and 39 under 35 U.S.C. §103(a) as being unpatentable over Johnson as applied above in paragraph 10, and further in view of Caducean (U.S. Patent 5,762,741).

The Examiner rejected claims 24, 33, and 38 under 35 U.S.C. §103(a) as being unpatentable over Uno *et al.* as applied above in paragraph 11, and further in view of the admitted prior art (Specification pages 1-3).

The Examiner rejected claims 27 and 30 under 35 U.S.C. §103(a) as being unpatentable over Uno *et al.* as applied above in paragraph 11, and further in view of Hanson (U.S. Patent 4,670,089).

The Examiner rejected claims 31 and 39 under 35 U.S.C. §103(a) as being unpatentable over Uno *et al.* as applied above in paragraph 11, and further in view of Caducean (U.S. Patent 5,762,741).

The Examiner rejected claims 41 and 42 under 35 U.S.C. §103(a) as being unpatentable over Uno *et al.* as applied above in paragraph 11, and further in view of Johnson.

Applicants respectfully traverse the §102 and §103 rejections with the following arguments.

35 U.S.C. §102

The Examiner rejected claims 23, 25, 26, 28, 29, 32, 34-36, and 40-45 under 35 U.S.C. §102(b) as being anticipated by Johnson (U.S. Patent 4,747,897). Applicants respectfully contend that Johnson does not anticipate claim 23, because Johnson does not teach each and every feature of claim 23. For example, Johnson does not teach “wherein the remaining layer of resin comprises material of the resin that has not impregnated the fluoropolymer matrix ... [and] ... wherein the fluoropolymer matrix is interfaced between the conductor and the remaining layer of resin following said laminating.” In Johnson, the fluoropolymer and the resin form a homogeneous composite 34 following said laminating (see Johnson, col. 6, lines 47-53). Thus, Johnson does not teach the remaining layer of resin of claim 23. Based on the preceding arguments, Applicants respectfully maintain that Johnson does not anticipate claim 23, and that claim 23 is in condition for allowance. Since claims 24-25, 27-33, 35-37, 39-43, and 45 depend from claim 23, Applicants contend that claims 24-25, 27-33, 35-37, 39-43, and 45 are likewise in condition for allowance.

The Examiner further rejected claims 23, 25, 26, 28, 29, 32, 34-37, 40, and 43-45 under 35 U.S.C. §102(b) as being anticipated by Uno *et al.* (U.S. Patent 4,765,860). Applicants respectfully contend that Uno does not anticipate claim 23, because Uno does not teach each and every feature of claim 23. For example, Uno does not teach “wherein the remaining layer of

resin comprises material of the resin that has not impregnated the fluoropolymer matrix ... [and] ... wherein the fluoropolymer matrix is interfaced between the conductor and the remaining layer of resin following said laminating.” In Uno, the adhesive (which may comprise thermosetting resin) is interfaced between the plastic base (which may comprise polytetrafluoroethylene) and the conductor (see Uno, col. 5, lines 22-31), and thus does not satisfy the aforementioned requirement of claim 23. Based on the preceding arguments, Applicants respectfully maintain that Uno does not anticipate claim 23, and that claim 23 is in condition for allowance. Since claims 24-25, 27-33, 35-37, 39-43, and 45 depend from claim 23, Applicants contend that claims 24-25, 27-33, 35-37, 39-43, and 45 are likewise in condition for allowance.

35 U.S.C. §103

The Examiner rejected claims 24, 33, 38, 27, 30, 37, 35, 31, 39, 41, and 42 under 35 U.S.C. §103(a). Since claim 38 has been cancelled, the rejection of claim 38 under 35 U.S.C. §103(a) is moot. Since claims 24, 33, 27, 30, 37, 35, 31, 39, 41, and 42 depend from claim 23, which Applicants have *supra* argued to be patentable under 35 U.S.C. §102, Applicants maintain that claims 24, 33, 27, 30, 37, 35, 31, 39, 41, and 42 are not unpatentable under 35 U.S.C. §103(a).

CONCLUSION

Based on the preceding arguments, Applicants respectfully believe that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invites the Examiner to contact Applicants' representative at the telephone number listed below.

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Appendix A. Identification of Amended Material

In the Specification, the paragraph beginning on page 19, line 19 is amended as follows:

Fig. 6 shows an integrated circuit chip carrier 22 that includes the coated filled body 9. The structure of the chip carrier 22 is generally known to those of ordinary skill in the art and although the precise form may vary, the chip carrier 22 of the present invention generally includes the following components: (1) dielectric layers including filled bodies 9; (2) electrically conductive layers 16; (3) plated through holes 28; (4) solder chip connectors 26; (5) ball grid array solder connector 27; (6) electrically conductive pads 30; [(7) integrated circuit chip 24;] and ([8]7) thermosetting resin 12' now used as a solder mask. The integrated circuit chip 24 is coupled to the chip carrier 22 through the solder connectors 26.

Please amend claims 23, 27, 33, 35, 37, 39-43, and 45 as follows:

23. (AMENDED) A method for forming a device, comprising the following steps:

providing a fluoropolymer matrix having particles therein;

[providing] coating a thermosetting resin on the fluoropolymer matrix;

processing the fluoropolymer matrix with the resin coated thereon such that material from the resin impregnates the fluoropolymer matrix, leaving a remaining layer of resin on a surface of the fluoropolymer matrix, wherein the remaining layer of resin comprises material of the resin that has not impregnated the fluoropolymer matrix; and

laminating the resin-impregnated fluoropolymer matrix to a conductor [using the

thermosetting resin], wherein the fluoropolymer matrix is interfaced between the conductor and the remaining layer of resin following said laminating.

27. (AMENDED) The method of claim 23, wherein a portion of the thermosetting resin is coated onto the conductor following the laminating step.

33. (AMENDED) The [device] method of claim 23, wherein the device is a chip carrier.

35. (AMENDED) The method of claim [34] 23, wherein the thermosetting resin includes solvent.

37. (AMENDED) The method of claim [34] 23, further comprising the step of subjecting the fluoropolymer matrix to a plasma process, prior to the coating step.

39. (AMENDED) The method of claim [34] 23, wherein the thermosetting resin contains about 30-75 percent solids.

40. (AMENDED) The method of claim [34] 23, wherein the laminating step comprises applying heat and pressure.

41. (AMENDED) The method of claim 40, wherein the heat is applied [to about] at 120-250° C during the laminating step.

42. (AMENDED) The method of claim 40, wherein the pressure is applied [to about] at 100-700 PSI during the laminating step.

43. (AMENDED) The method of claim [34] 23, wherein the fluoropolymer matrix is impregnated with the thermosetting resin, prior to the providing step.

45. (AMENDED) The method of claim [34] 35, further comprising the steps of:
coating the conductor with the thermosetting resin, prior to the laminating step; and
heating the coated conductor to remove the solvent from the thermosetting resin.

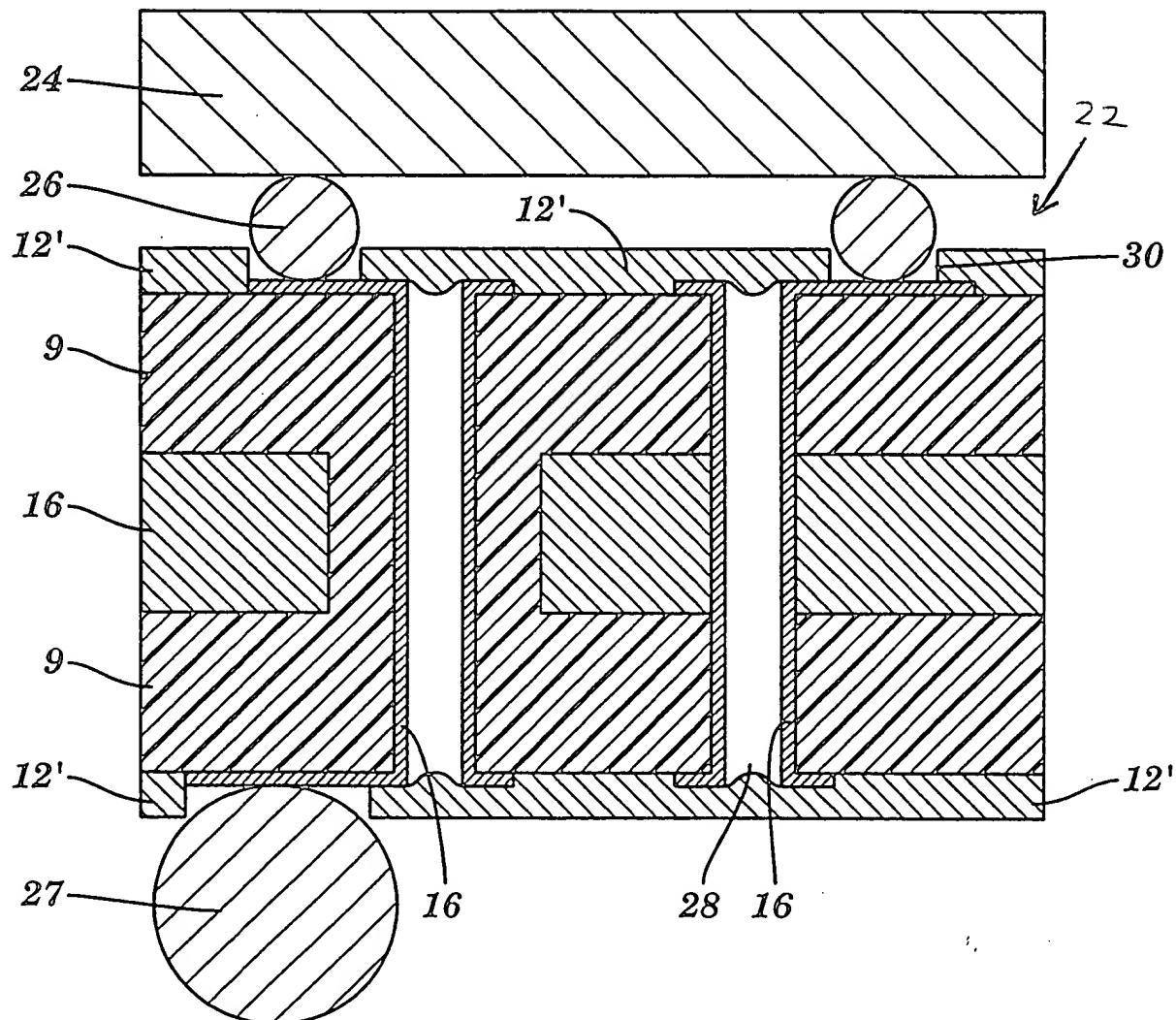


FIG. 6